Abstract

On a CNC machine for machining spiral bevel gears the axis (T) of a tool spindle forms a fixed, non-adjustable tilt angle (κ) against an orientation axis (O) for all bevel gears to be machined. The tool spindle is adapted to be continuously swiveled about the orientation axis (O) by a swivel drum. A work gear spindle is adjustable in its angular position about a pivot axis (P) for a bevel gear to be machined on the machine, but it does not change its angular position during the machining operation. The tilt angle (κ) and the angular position are selected such that a predetermined rolling motion between the work gear and the tool can be achieved. Swiveling of the tool spindle axis (T) about the orientation axis (O) leads to a higher machine stiffness than does a machine root angle pivoting of the work gear spindle axis (W) about the pivot axis (P) applied in the prior art, and therefore, it results in more precise tooth flanks on the machined spiral bevel gears.